



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,402	03/31/2004	Achintya K. Bhowmik	ITL1099US (P18549)	5383
21906 7590 06/02/2008 TROP PRUNER & HU, PC 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631				
EXAMINER STULTZ, JESSICA T				
ART UNIT 2873		PAPER NUMBER		
MAIL DATE 06/02/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* ACHINTYA K. BHOWMIK and SHIDA TAN

---

Appeal 2008-0476  
Application 10/814,402  
Technology Center 2800

---

Decided: June 2, 2008

---

Before KENNETH W. HAIRSTON, KARL D. EASTHOM, and KEVIN F.  
TURNER *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the Final Rejection of claims 1-28. We have jurisdiction pursuant to 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Appellants' invention relates to a method for displaying an image using a second order non-linear electro-optic film. An understanding of the

invention can be derived from a reading of exemplary claim 1, which is reproduced below:

1. A method comprising:  
displaying an image using a second order non-linear electro-optic film.

The Examiner relies on the following prior art references:

Takano	US 5,844,249	Dec. 1, 1998
Yakymyshyn	US 5,396,362	Mar. 7, 1995
Batchko	US 2002/0158866 A1	Oct. 31, 2002
Henrichs	US 6,879,615 B2	Apr. 12, 2005

Claims 1, 4-6, 12-18, and 20-26 stand rejected under 35 U.S.C. § 102 (b) as being anticipated by Takano.

Claims 2 and 7-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the collective teachings of Takano and Henrichs.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the collective teachings of Takano, Henrichs and Yakymyshyn.

Claims 19 and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the collective teachings of Takano and Yakymyshyn.

Claims 3 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the collective teachings of Takano and Batchko.

Rather than repeat the arguments of the Appellants or the Examiner, we refer to the Briefs and the Answer for their respective details.<sup>1</sup> In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

*We affirm.*

### FINDINGS OF FACT (FF)

1. Takano's system optically analyzes circuit boards for defects of wires such as disconnections or short-circuits. A voltage is applied to the circuit board which causes the refractive index of a non-linear film 14 (integrated into optical sensor 100 and sensor head 102) to vary as the sensor head 102 is scanned over the circuit board, which then causes the output of photoelectric transducer 46 to vary. The voltage output of the transducer 46 is used to create a displayed voltage distribution image of the circuit board on a display means such as signal processing unit/computer 104. (Abstract, col. 1, ll. 23-30, col. 15, ll. 37-62, col. 16, ll. 15-39; col. 18, ll. 52-59, Figs. 2, 5-6).

2. Using the same system described above, Takano also discloses creating wire 52 images on a circuit board. (Figs. 9-10, col. 19, l. 55 to col. 20, l. 17).

---

<sup>1</sup> We refer to the Appeal Brief filed Mar. 20, 2007 ("App. Br."), the Reply Brief filed Aug. 23, 2007 ("Reply Br."), and the Examiner's Answer mailed July 3, 2007 ("Ans.").

## ANALYSIS

### *The Anticipation Rejection*

We first consider the Examiner's anticipation rejection of claims 1, 4-6, 12-18, and 20-26 over Takano. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. *RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984); *W.L. Gore and Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554 (Fed. Cir. 1983).

Appellants' arguments are directed to claims 1, 4-6, 12-18, and 20-26 as a group (App. Br. 10). Thus, in accordance with 37 C.F.R. § 41.37 (c)(1)(vii), we group these claims together and select claim 1 as representative of the group.

Appellants dispute the Examiner's determination that Takano meets the method of claim 1 (Ans. 3, App. Br. 10). Specifically, Appellants first argue that Takano does not disclose displaying an image (App. Br. 10). The Examiner's position is that Takano discloses displaying an image at Column 16, lines 15-39 and Figure 5, via display 104 (with the second order non-linear electro-effect produced by film 14 of optical sensor 100) (Ans. 3). We agree with the Examiner's position.

Takano states: "A distribution situation of voltages detected by the detecting means 34 is displayed on an image processing/display means (not shown) of the signal processing unit 104 such as a computer or the like for each location which was scanned by the sensor head 102." (Col. 16, ll. 31-36). (*See also* FF 1, 2).

Referring to the cited passage of Takano and the Examiner's position, Appellants counter with a second argument as follows:

The second order non-linear electro-optic effect is not used to display any image. The optical effect causes a voltage generated by the photoelectric transducer to change. This cannot reasonably be said to be displaying an image using a second order non-linear optical effect because no image is generated using that effect. *The only images that are generated are to display a voltage generated by another element.*

(App. Br. 10) (emphasis supplied).

In other words, Appellants refine their first argument *supra* that no image is displayed, and instead argue that while Takano's system creates images, those images are "generated by another element." This argument must fail because claim 1 does not specify the use of any element. Rather, claim 1 requires "using a second order non-linear electro-optic effect."

Appellants do not dispute the Examiner's finding that Takano's non-linear electro-optic film 14 creates a second order non-linear electro-optic effect (Ans. 3). Appellants' argument also admits that "images are generated." Since, according to Appellants, the non-linear effect "causes a voltage generated by the photoelectric transducer to change," and that voltage ultimately is used to create an image on computer display means 104 (*see* FF 1), we determine that Takano meets the method of claim 1. We find that a non-linear electro-optic effect is used to display the image because it is required in the system to create the image, without which, the image would be different (*see* FF 1). We also note that Takano discloses not only displays of voltage distribution using the claimed non-linear effect, but also displays of wire images using that effect (*see* FF 2).

We also are not persuaded by Appellants' argument that claim 1 requires "that the display use the claimed effect." (Reply Br. 1). Claim 1 does not recite a display, hence it follows that no display is required to use the effect. In any case, we determine that Takano's display uses the claimed non-linear effect, because as Appellants' second argument *supra* concedes, the display ultimately uses a voltage generated from the non-linear effect (*see also* FF 1, FF 2). Thus, we determine that even if the claim implies a display, it does not require the display to create the second order effect, as Appellants' argument implies.<sup>2</sup> Appellants' further argument that there is no evidence that "a computer or the like" in Takano's system uses a second order non-linear effect element also (Reply Br. 2) is not persuasive because, as explained above, Takano's computer system 104 ultimately uses the effect to create the wire or voltage distribution images since the display uses voltages arising from the effect (*see* FF 1-2).<sup>3</sup> Moreover, the claim requires no such "computer or the like."

Our determination is also consistent with Appellants' disclosure which indicates that a display can be separate from the non-linear imager: "In a projection display system, the imager produces the image that appears on the display." (Spec. 1: 7-9). Moreover, Appellants equate a display with a computer system: "The system 30 may be a computer system, it may be a

---

<sup>2</sup> Independent claims 12 and 20, argued as a group with claim 1, do not even imply a display. Hence the argument is not commensurate in scope with those claims.

<sup>3</sup> Appellants' related assertion that "[i]t is irrelevant whether a second order electro-optic is used to develop a signal that is then displayed using a computer . . ." (Reply Br. 2) lacks a factual foundation because Takano's system displays either wire or voltage distribution images (FF 1, 2), not a mere signal as asserted.

television system, or it may be a variety of other displays.” (Spec. 6: 4-6; *see also* Fig. 2). In light of the disclosure in the Specification, Appellants’ implied argument that claim 1 requires a discrete display component to create the claimed nonlinear effect is not persuasive. Consequently, either Takano’s display 104 or entire system (Fig. 5) uses the nonlinear effect in the manner claimed, or no display is required.

For the foregoing reasons, the method set forth in independent claim 1 is fully met by Takano. We will also sustain the Examiner’s rejection of independent claims 12 and 20, and dependent claims 4-6, 13-18, and 21-26, which were not separately argued (*see* App. Br. 10), and therefore fall with claim 1.<sup>4</sup>

#### *The Obviousness Rejections*

We now consider the Examiner’s obviousness rejections. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

If the Examiner’s burden is met, the burden then shifts to the Appellant to overcome the *prima facie* case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

---

<sup>4</sup> The recitation of the claim elements (Reply Br. 3) does not rise to the level of argument asserting an error in the Examiner’s determination. *See* 37 C.F.R. § 41.37(c)(1)(vii).



Claims 2 and 7-10

Appellants do not separately argue the Examiner's obviousness rejection of claims 2 and 7-10 over the collective teachings of Takano and Henrichs, but relies instead on the same arguments relied upon for claim 1 (App. Br. 11). For the reasons explained above, the Examiner's rejection is therefore sustained.

Claim 11

Likewise, Appellants do not separately argue the Examiner's obviousness rejection of claim 11 over the collective teachings of Takano, Henrichs and Yakymyshyn with particularity, but rely instead on the same arguments relied upon for claim 1 (App. Br. 11). For the reasons explained above, the Examiner's rejection is therefore sustained.

Claims 19 and 27

Appellants also do not separately argue the Examiner's obviousness rejection of claims 19 and 27 over the teachings of Takano and Yakymyshyn with particularity, but rely instead on the same argument relied upon for claim 1 (App. Br. 11). For reasons explained above, the Examiner's rejection is therefore sustained.

Claims 3 and 28

Finally, Appellants also do not separately argue the Examiner's obviousness rejection of claims 3 and 28 over the teachings of Takano and Batchko with particularity, but rely instead on the same argument relied upon for claim 1 (App. Br. 11). For reasons explained above, the Examiner's rejection is therefore sustained.

CONCLUSION

Appellants have failed to convince us of error in the Examiner's rejections of claims 1-28. Accordingly, we affirm the Examiner's rejections of claims 1-28.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(2006).

AFFIRMED

gvw

TROP PRUNER & HU PC  
1616 S. Voss Road, Suite 750  
Houston, TX 77057-2631